

July 29, 2021

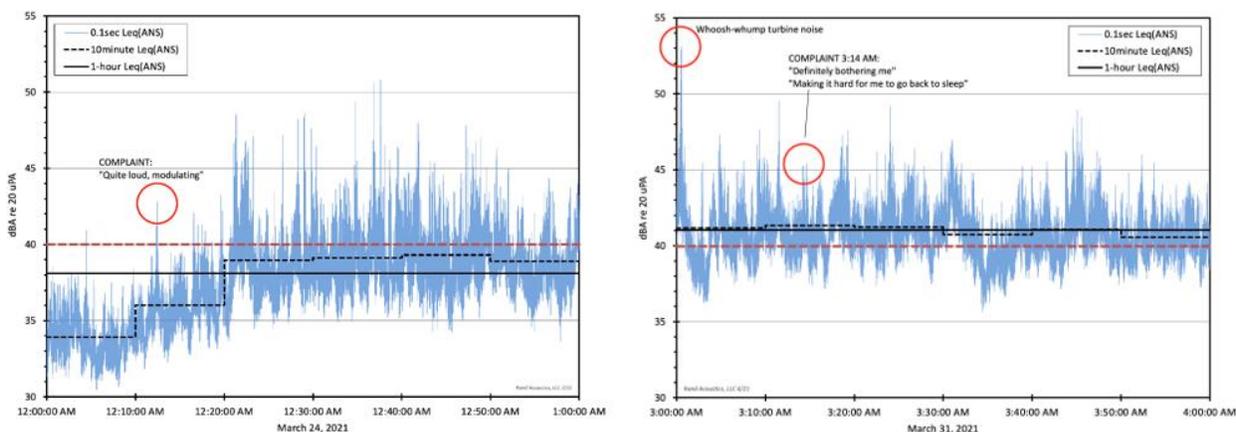
**VIA ELECTRONIC MAIL**

Jonathan Evans, Presiding Officer  
New Hampshire Site Evaluation Committee  
21 Fruit Street, Suite 10  
Concord, New Hampshire 03301

Re: Graphical Method to Assess Noise Compliance  
Docket No. 2021-02, Antrim Wind Energy Facility

Dear Mr. Evans and Committee Members:

Compliance noise level assessments are relatively easy for wind turbines that are clearly audible in rural communities. Graphical methods can demonstrate compliance visually and conform to S12.9-2013 Part 3 - Short-term Measurements with an Observer Present [1]. Plot the measured 0.1-sec equivalent as sound level vs time with noise limit, and annotate with time-synced noise complaints as shown below. Note that Leq 10-min and 1-hr lower the 0.1-sec equivalent levels by about 10 dB.



ANSI S12.9-2013 Part 3 defines *dominant* sound [2], and §6.4 (b)(1) *initial data collection* is for *steady* sources [3], which are the only sound sources permitted to remove ambient background. Wind turbines are *non-steady dominant* sound sources.

Please feel free to contact me with questions. Thank you.

Respectfully, *Stephen E. Ambrose*

Stephen E. Ambrose, ASA, INCE, 1981 Board Certified, emeritus

1. ANSI/ASA S12.9-2013 - Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-term Measurements with an Observer Present, Acoustical Society of America, Melville, New York.
2. §3.6 *dominant* sound, when heard among other sounds, that is audibly louder than all other sounds combined, and that causes a change of the indicated sound pressure level (measured using approximately a 0.1 s time average or a fast time weighting) of at least 6 decibels (dB) with the audible fluctuations corresponding to the visible fluctuations of the indicated sound pressure levels.
3. §6.4 *initial data collection*, (b) The characteristics of the source(s) and type of operation shall be examined to determine if: (1) the sound pressure level of the source is essentially steady with time (e.g., cooling tower, electric power transformer, or diesel generator), or (2) the sound pressure level of the source varies with time (e.g., cycling window air-conditioner, steam over-pressure valves, jet engine test cell, construction cranes, bulldozers, and forklift trucks).